

VEX V5 Competition Elements

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Robotics & Mechatronics

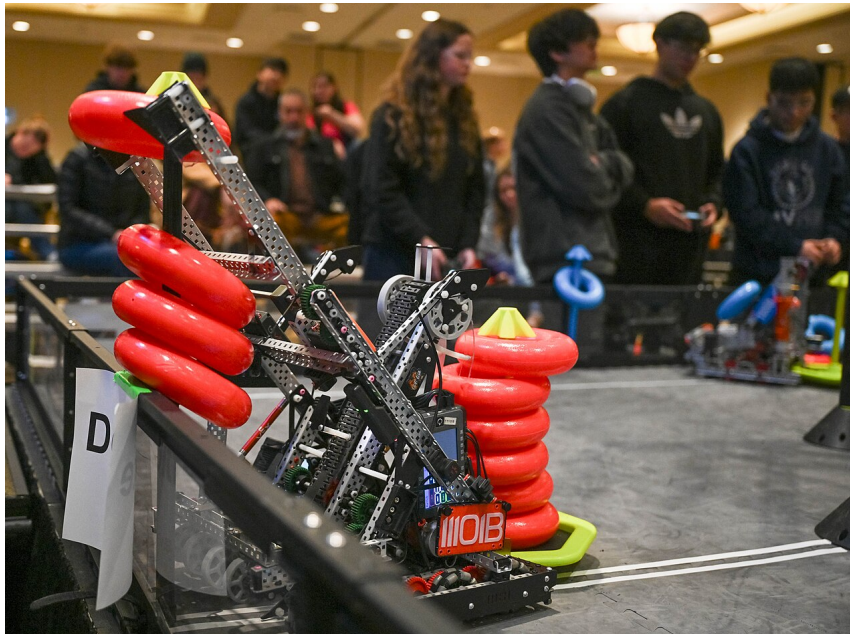


Photo: U.S. Space Force photo by Staff Sgt. Jaime Sanchez — Public domain — via Wikimedia Commons (Space_Base_Delta_1_volunteers_inspire_future_STEM_leaders_at_AFCEA_Robotics_Competition_(8866285).jpg)

VEX V5 is the advanced competition robotics platform with a powerful Cortex upgrade: smart motors with encoders, a colour touchscreen brain, sensors and metal structures. Competition elements include the V5 brain, motors, sensors, radio and official field hardware for head-to-head robotics.

Key Features

- V5 Brain with colour touchscreen
- Smart motors with built-in encoders
- Vision, distance, inertial and optical sensors
- V5 radio for wireless control
- Metal structural system with pins and bearings

Typical Uses in the Workshop

- Build competition robots for VEX V5 events
- Teach advanced control and sensor fusion
- Run autonomous routines with gyro and vision
- Model industrial robot design and teamwork

Safe Operation

1. Assemble the drivetrain to the event rules
2. Wire smart motors to the V5 ports
3. Code with the VEXcode blocks or C++
4. Test driving and autonomous modes separately
5. Keep the robot within the competition size limits

SAFETY NOTES

- Keep fingers clear of moving mechanisms
- Secure the battery pack firmly
- Check motor and cable conditions before events
- Transport batteries in a safe pouch
- Follow the event build and safety rules

Maintenance & Consumables

- Clean motors and check cables
- Update the V5 firmware regularly
- Check structural joints before each session
- Keep the battery charged and stored safely
- Maintain spare motors, gears and screws

Specification & Buying Notes

Start with the V5 Starter Kit plus the competition kit for the season. Smart motors and the colour brain cost more but last and teach more. Budget for spares and batteries.